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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/587,249 06/02/00 YOSHIOKA

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005514 MMC1/0503
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EXAMINER

ART UNIT	PAPER NUMBER
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2879

DATE MAILED:
05/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/587,249

Applicant(s)

YOSHIOKA ET AL.

Examiner

Kenneth J. Ramsey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-57 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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Defective Reissue Declaration

1. The reissue oath/declaration filed with this application is defective because it fails to contain the statement required under 37 CFR 1.175(a)(1) that applicant's believe the original patent to be wholly or partly inoperative or invalid. See 37 CFR 1.175(a)(1) and see MPEP § 1414.

2. The reissue oath/declaration filed with this application is defective because it fails to identify at least one error which is relied upon to support the reissue application. See 37 CFR 1.175(a)(1) and MPEP § 1414. Merely stating that the inventors did not appreciate that claims 6-17 could have been presented for examination is not sufficient, since it does not assert that applicants claimed less than they had a right to claim in the patent. Applicants do not have a right to recapture that which they gave up to obtain the patent. Applicant canceled certain claims and amended another to avoid a double patenting rejection over claims of U.S. Patent No. 5,066,083. Thus they do not have a right to include claims which are not patentably distinct from the claims of the '083 patent. Further, in paper number 5, filed July 27, 1995, applicants specifically canceled claims and elected to direct their claims to the invention of Group III, identified as claims 134-137 and 141-144, in the divisional application now being reissued. Thus they do not have a right to claim that subject matter which is not directed to that invention. Finally, the declaration points to no limitation or limitations in the patent claims that constitutes an error by way of claiming less than applicants had a right to claim in the patent.

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3. The examiner notes that at least one unpublished decision by the Board of Appeals and Patent Interferences holds that an assertion in a declaration that applicant claimed less than they had a right to claim both identifies a perceived error under 35 U.S.C. 251 and states the error being relied upon as the basis for reissue per 37 CFR 1.175 (a) (1). However, the official position within Technology Center 2800 is that such is not settled law. Thus, a statement of "at least one error being relied upon", must include the identification of specific subject matter that constitutes an error, e.g. a limitation of the patent claims that results in applicants claiming less than they had a right to claim in the patent. This requirement is not met by mere reference to claims added by the reissue application. The examiner suggests that applicants state that to have limited claimed subject matter to etching, or dispersing particles fine particles between electrodes on a semiconductor layer as recited in independent patent claims 1-3 constitutes claiming less than applicants had a right to claim in the patent. For further information on this matter, applicants may review paragraphs 5 and 6 of section 1414 (II.), "A Statement of at least one error which is relied upon to support the reissue application", of the M.P.E.P, revision 1, pages 1400-16 and 1400-17.

4. Claims 1 through 57 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

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Recapture

5. Claims 12-15, 38, 46-48 and 54 are rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. See *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997); *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application. Specifically, claims 12, 38 and 54 recite forming one or a plurality of cathodes comprising the steps of disposing a pair of electrodes on a substrate and providing a layer comprising an insulating layer and some protruding particles in the insulating layer corresponding to canceled claim 137. Applicants canceled claim 137 in favor of more restrictive claims that recited etching the insulative layer to expose the particles. Claims 13-15 and 47-48 merely recite obvious materials of the devices as claimed.

6. Claims 6, 7, 8, 9, 10, 36 and 37 are also rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the

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application for the patent upon which the present reissue is based. See *Hester Industries, Inc. v. Stein, Inc.*, 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997); *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Specifically, in the application that became the patent herein examined, the examiner rejected claims 134-136 solely under the grounds of obviousness type double patenting over claims 1-49 of applicants prior patent 5,066,883. To avoid the filing of a terminal disclaimer, applicant canceled these rejected claims and avoided claims that would be obvious over the above patent claims of 5,066,883. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application. Specifically, claims 6, 9, 36 and 37 are obvious over claim 11 of U.S. Patent 5,066,883; and claims 7, 8 and 10 are obvious over claim 11 of U.S. Patent 5,066,883 combined with claim 14 of U.S. Patent 5,066,883. With respect to claims 6 and 36, patent claim 11 recites the layer comprising two kinds of materials wherein the kinds of materials include electron emitting material selected from the group consisting of borides, carbides, nitrides, metals, metal oxides, semiconductors, and carbon. To have selected a metal and a semiconductor as the two kinds of materials would have been obvious to one of

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ordinary skill in the art since metals and semiconductors are known equivalents for their field emission property as evidenced by patent claim 10. Likewise as to claims 9 and 37, to have selected a metal and carbon as the two kinds of materials would have been obvious to one of ordinary skill in the art since carbon is also a known equivalent for its field emission property as evidenced by patent claim 10. As to claims 7, 8, and 10 the use of the specific materials is mentioned in patent claim 14 and the use of materials specifically mentioned in the prior art for such use has been held to be obvious to those of ordinary skill in the art.

Indefiniteness

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 13 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "semi metal", claims 13 and 18 is not clearly defined by the applicant, nor is it well understood in the art.

Duplicate Claims

9. Claims 46-48 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 12-14. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Rejections Based on Prior Art

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 6, 36, 42, 43, 52 and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith 3,611,077. Smith, column 2, lines 42-59, discloses a surface conduction cathode comprising a non-homogeneous layer of metal and a semiconductor. As to claims 36, 42, 43, 52 and 57, Smith discloses at column 1, lines 59-60, the making of display devices which inherently would comprise a plurality of the surface conduction cathodes in a matrix array.

3. Claims 6, 8, 43 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Soellner et al 3,663,857. Soellner et al, column 2, line 45 through column 3, line 15 discloses forming a surface conduction cathode comprising a pair of gold electrodes disposed on first and second regions of a substrate and a layer provided therebetween comprising a metal (indium) and a semiconductor (SnO_2).

4. Claims 9 and 16 are rejected under 35 U.S.C. 102(a) as being anticipated by H. Pagnia and N. Sotnik, "Bistable Switching in Electroformed Metal-Insulator-Metal Devices", published in 1998 in Phys. Stat. Sol. (a), **108**, 11, pp 11-65. Section 3, pages 21-33 discloses forming a M-I-M planar device comprising an electroformed thin gold

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layer with deposited carbon between gold islands (particles). Subsection 6.1, pages 50-52, describes the electron emission behavior of these devices.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 8, 36, 42, 43, 45, 52 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Soellner et al. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to substitute SnO₂ for the semiconductor material of Smith since Soellner et al, column 1, lines 66-70, teaches the high electron emission obtained from indium doped SnO₂ devices.

7. Claims 9, 16, 18, 20, 21, 22, 37 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Blessing et al "The electroforming process in MIM diodes" (1981) *Thin Solid Films*, 85, pp 119-128, or Pagnia et al, "Bistable Switching in Electroformed Metal-Insulator-Metal Devices", *supra*. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to provide a plurality of metal-carbon cathode devices as taught by both Blessing et al and Pagnia et al on a single substrate to provide plural electron emission sites. Such expedient is well known in the art, for instance, to obtain plural devices in a single step.

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Allowable Subject Matter

8. Claims 7, 10, 11, and 44, which are rejected as being base upon an improper reissue declaration, would otherwise be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims ~~1-5~~, 23-35, 39-41, 49-50, and 55-56 stand rejected as being base upon an improper reissue declaration, but would otherwise are allowable over the prior art of record.

Citation of Pertinent Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bischoff et al, *Thin Solid Films*, **165** (1988), pages 49-54, especially pages 50-51, discloses that it was known as early as 1978 that electroforming metal films in an atmosphere containing residual organic gases from the oil pumping system causes deposits of carbon between the electroformed discontinuity.

Directions for Responses

Any formal response to this communication should be directed to examiner Kenneth Ramsey, Art Unit 2879, and either


faxed to
703-872-9318

or mailed to:

Assistant Commissioner for Patents
Washington, D.C. 20231

Technical inquiries concerning this communication should be directed to Kenneth J. Ramsey, (703)308-2324 (voice), (703) 746-4832 (fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Kenneth J. Ramsey
Primary Examiner
Art Unit 2879